Configuring BGP on Cisco Routers

Varighet: 5 Days **Kurskode: BGP** **Version: 4.0**

Beskrivelse:

Configuring BGP on Cisco Routers provides students with an in-depth knowledge of Border Gateway Protocol (BGP), a routing protocol that is one of the foundations of the Internet and New World technologies such as Multiprotocol Label Switching (MPLS).
This course focuses on the theory of BGP, the configuration and troubleshooting of BGP on Cisco IOS routers. Extensive use of hands on labs has been incoporated into this curriculum to ensure learners have the skills required to configure and troublshoot BGP networks in customer environments.

Each student will have their own virtual pod of equipment with access to the labs 24x7 for 90 days.

This course is worth 40 Credits in the Continuing Education Program

Målgruppe:

Service Provider and Enterprise network engineers that design,deploy and maintain core IP network infrastructures running BGP.

Agenda:

- **After you complete this course you will be able to:**
- Describe how to configure, monitor and troubleshoot basic BGP to enable interdomain routing in a network scenario with multiple domains.
- Describe how to use BGP policy controls to influence the route selection process in a network scenario where you must support connections to multiple ISPs.
- Describe how to use BGP attributes to influence the route selection process in a network scenario where you must support multiple connections.
- Describe how to successfully connect the customer network to the Internet in a network scenario in which multiple connections must be implemented.
- Describe how to configure the service provider network to behave as a transit AS in a typical implementation with multiple BGP connections to other autonomous systems.
- Enable route reflection and confederations as possible solutions to BGP scaling issues in a typical service provider network with multiple BGP connections to other autonomous systems.
- Describe the available BGP tools and features to optimize the scalability of the BGP routing protocol in a typical BGP network.

Forkunnskaper:

Attendees should meet the following prerequisites:

- Intermediate to advanced Knowledge of Cisco IOS Software configuration - **CCNA Routing and Switching** or **CCNA Service Provider** recommended.
- Prior attendance of the **ROUTE** course is strongly recommended.

Test og sertifisering

Recommended preparation for exam(s):

- No exam is currently aligned to this course.

Innhold:

BGP Overview

- Introducing BGP
- Understanding BGP Path Attributes
- Establishing BGP Sessions
- Processing BGP Routes
- Configuring Basic BGP
- Monitoring and Troubleshooting BGP

BGP Transit Autonomous Systems

- Working with a Transit AS
- Interacting with IBGP and EBGP in a Transit AS
- Forwarding Packets in a Transit AS
- Monitoring and Troubleshooting IBGP in a Transit AS

Route Selection using Policy Controls

- Using Multihomed BGP Networks
- Employing AS – Path Filters
- Filtering with Prefix-Lists
- Using Outbound Route Filtering
- Applying Route-Maps as BGP Filters
- Implementing Changes in BGP Policy

Route Selection Using Attributes

- Influencing BGP Route Selection with Weights
- Setting BGP Local Preference
- Using AS-Path Prepending
- Understanding the BGP Multi-Exit Discriminator
- Addressing BGP Communities

Customer-to-Provider Connectivity with BGP

- Understanding Customer-to-Provider Connectivity Requirements
- Implementing Customer Connectivity Using Static Routing
- Connecting a Multihomed Customer to a Single Service Provider
- Connecting a Multihomed Customer to Multiple Service Providers

Scaling Service Provider Networks

- Scaling IGP and BGP in Service Provider Networks
- Introducing and Designing Route Reflectors
- Configuring and Monitoring Route Reflectors

Optimizing BGP Scalability

- Improving BGP Convergence
- Limiting the Number of Prefixes Received from a BGP Neighbor
- Implementing BGP Peer Groups
- Using BGP Route Dampening

Labs

- Discovery 1: Configure Basic BGP
- Discovery 2: Announcing Networks in BGP
- Discovery 3: Implement BGP TTL Security Check
- Discovery 4: BGP Route Propagation
- Discovery 5: IBGP Full Mesh
- Discovery 6: BGP Administrative Distance
- Discovery 7: Configure Non-Transit Autonomous System
- Discovery 8: Filtering Customer Prefixes
- Discovery 9: Prefix-Based Outbound Route Filtering
- Discovery 10: Configure Route Maps as BGP Filters
- Discovery 11: Configure Per-Neighbor Weights
- Discovery 12: Configure and Monitor Local Preference
- Discovery 13: Configure Local Preference Using Route Maps
- Discovery 14: Configure AS Path Prepending
- Discovery 15: Configure MED
- Discovery 16: Configure Local Preference Using the Communities
- Discovery 17: Configure Route Reflector
- Discovery 18: Configure BGP Route Limiting
- Discovery 19: Configure BGP Peer Groups
- Discovery 20: Configure BGP Route Dampening
- Challenge 1: Configure a Basic BGP Network
- Challenge 2: Configure a BGP Transit AS
- Challenge 3: Configure BGP Using BGP Filtering
- Challenge 4: Configure BGP Route Selection Using BGP Attributes
- Challenge 5: Configure BGP Route Reflectors

Ytterligere informasjon:

For mer informasjon eller kursbooking, vennligst ring oss 22 95 66 00

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